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the presidents of the two associations are, I believe, men of the practical type, who have a genuine desire to be of service, and like many of us who have entered upon war work, have learned during these past few and trying months, that the highest form of duty is service, and not service to ourselves but to our country. Out of the great war have come many lessons, but perhaps this in the end will prove to be the greatest. If it lies, therefore, within the power of these two associations to be of real service to the Census Bureau at this time, the call cannot be disregarded. It is a pleasure to record the cordial attitude of the officials of the department and of the census and their desire to make any practical move which seems to promise real results. It is to be hoped that the committee here mentioned will be able to hold meetings at stated intervals; to take up for consideration definite problems to be assigned to it by the director of the census, and to make thereon specific, practical and helpful reports, so that he may feel that he has the assistance of a trained group of men who will help him solve the problems confronting him on all sides in his great task.

THE CHAIRMAN: Next, I have the pleasure of introducing the director of the census, Honorable Samuel L. Rogers.

RECENT PROGRESS AND PLANS OF THE BUREAU OF THE CENSUS.

By SAMUEL L. ROGERS.

I am glad of this opportunity of meeting the members of the American Statistical Association, and I can assure them that I am in full sympathy with their aspirations for the development and improvement of statistical work in the United States. Representing as I do the principal and, in fact, the one distinctively statistical bureau of the national government, I am, of course, actively interested and concerned in any discussion of the subject of federal statistics. Of the total output of such statistics I should judge that something like 80 or 90 per cent. is compiled and published by this bureau. It is a bureau whose sole function is statistical. It has no executive duties or participation in the control of public affairs

or the regulation of private interests. Its objects, in fact, are precisely those of the American Statistical Association as defined in your constitution, namely, "to collect, preserve, and diffuse statistical information in the different departments of human knowledge." In other words it is a purely scientific bureau which might properly adopt as its motto: Statistics and nothing but statistics.

It has been a matter of regret to me that I have not seen more of the members of the American Statistical Association and become better acquainted with them. It was because I felt the need of your coöperation, counsel, and support that I requested the appointment of the joint advisory census committee representing this organization and the American Economic Association, and I anticipate that that committee will be of great assistance in formulating and carrying out the plans for the next census.

I believe that no one appreciates more keenly than I do the value and importance of reliable statistics, although I do not claim to be classed as a statistician. It has certainly been my purpose and desire that the statistics emanating from this bureau shall be such as will come up to the standards and requirements of statisticians and merit the endorsement of your organization. It will be four years next March since I received my commission as director of the census, and I believe, gentlemen, that my brief record as the official head of that bureau is good evidence of my purpose. I believe you will bear me out in the statement that during my term of office the high standard of excellence in the statistical work of the Census Bureau has been fully maintained. More than that, I think I can claim that the census publications issued in this interval represent a considerable advance and improvement over anything the bureau has before published on the subjects to which they relate. I will mention in this connection the report on the Negro Population of the United States which was prepared by Dr. John Cummings. It is unnecessary for me to point out to the members of this Association the rare qualifications he possesses for a work of this character. For many years to come this single volume of about 840 quarto pages will constitute the most complete, comprehensive, and

valuable storehouse of statistical data relative to the Negroes that has ever been published. Another census publication which I can mention as an evidence of a high standard of statistical excellence in our work is the report on Prisoners and Juvenile Delinquents which was prepared by the President-elect of this Association, Dr. Hill. I may mention, also, the reports on the Blind and Deaf Mutes prepared under Dr. Hill's supervision by Reginald L. Brown, another member of this Association.

About a year ago we issued a statistical monograph on cancer, presenting in great detail the mortality data for this obscure and dreadful malady and distinguishing carefully those cases in which the diagnosis was based on an autopsy or surgical operation and therefore not open to question from those more or less doubtful cases in which it was based on clinical findings. In the preparation of this report the bureau had the benefit of the advice and coöperation of the American Society for the Control of Cancer, as represented by its Statistical Advisory Board, on which are the names of Hoffman, Wilbur, Guilfooy, Dublin, Lakeman, Willcox, and Mayo. The results of this statistical investigation are, I think, generally recognized as a valuable contribution to medical science. A monograph of similar character on tuberculosis is in preparation.

I may mention also the Census Life Tables, which were prepared under the direction and supervision of James W. Glover, professor of mathematics and insurance in the University of Michigan, and which form the first comprehensive life tables applying to conditions in this country.

The work of the Division of Vital Statistics, under the direction of the chief statistician, Dr. William H. Davis, is being steadily extended to cover a larger area of the United States for the registration of deaths and to include also a registration area for births, the latter comprising all of the New England states, together with New York, Pennsylvania, Michigan, Minnesota, Maryland, and the District of Columbia. Two annual reports on birth statistics have been issued. The registration area for deaths now comprises 78 per cent., that for births 53 per cent., of the total population of the

United States. The bureau is now publishing a weekly health index showing deaths and death rates in the principal cities of the country in the previous week with comparative figures for earlier years.

The bureau for many years has annually published Financial Statistics of Cities, and since my connection with the bureau this branch of our work has been extended, under the initiative of Starke M. Grogan, chief statistician, to include the financial statistics of the states as well, so that we are now issuing annual reports on this subject also. Most favorable comment has been received in reference to the recent publications prepared by this division of the bureau. In particular the report on "Specified Sources of Municipal Revenue: 1917" being a new subject has created a very wide interest. At this time when municipalities are struggling with the problems of raising funds for needed improvements and planning for the reconstruction period after the war, carrying the heavy burdens that naturally go with taxation, the information contained in this report is of especial value.

The Division of Manufactures under Mr. W. M. Steuart, chief statistician, brought to completion the immense work of the quinquennial census of manufactures and made the results available in a shorter time than ever before.

On account of the importance of shipbuilding arising from war conditions, a special census of the shipbuilding industry was authorized by the secretary of commerce, and taken for the calendar year 1916. These data, with comparative figures for 1914, were furnished promptly to the United States Shipping Board and to the Emergency Fleet Corporation, and were of much value in the initial work of these newly-created agencies of the federal government.

Under the present chief statistician for manufactures, Mr. Eugene F. Hartley, who succeeded Mr. Steuart in June, 1917, the division in addition to the regular investigations has conducted, at the request of the war boards and upon the special authority of the President of the United States and the secretary of commerce, a number of investigations which have been grouped under the title "Census of War Commodities." A mere enumeration of these investigations reveals the wide

scope and importance of this war work, and is as follows: Census of edible oils; census of acids and chemicals used in the manufacture of explosives; statistics of jute, kapok antimony, silk, and graphite crucibles; monthly statistics of leather stocks on hand, and boots, shoes and manufactured leather goods; statistics of iron and steel covering stocks on hand, consumption and requirements; and a census of wool manufactures covering machinery and production—the data for production for the years 1915, 1916, and 1917. The collection of these statistics and the prompt furnishing of the results to the war agencies has called forth the highest commendation not only from the war boards for which primarily the data were gathered, but has also elicited noteworthy praise from associations of industry who have benefited by the dissemination of the statistics.

In August, 1918, under the initiative of Mr. William L. Austin, chief statistician for agriculture in the Bureau of the Census, a conference was held in Washington for the purpose of preparing a general schedule of agriculture for the coming census.* About 40,000 copies of the schedule agreed upon by this conference were printed and this edition was distributed and tried out by the township and county agents of the Department of Agriculture. Later in the year similar conferences were held on irrigation and drainage, and tentative schedules have been prepared covering these subjects also.

The Division of Agriculture in the meantime is preparing in advance, so far as practicable, the copy for the statistical tables for the Fourteenth Census reports, inserting the figures of previous censuses but leaving, of course, the columns for 1920 blank, to be filled in as soon as the figures are available.

In May, 1917, immediately following the passage of the selective-service law, the Bureau of the Census published an

* The participants in this conference included Dr. Le Grand Powers, formerly chief statistician for agriculture, and Dr. John Lee Coulter, formerly expert special agent in charge of agriculture; Mr. William A. Hathaway, Mr. W. J. Barrows, and Mr. Clarence Hurry, all of whom were connected with the division of agriculture during the Census of 1910; and Dr. George F. Warren of Cornell University, Dr. Henry C. Taylor of the University of Wisconsin, and Dr. Clarence Poe, editor of the *Progressive Farmer*. The representatives of the Department of Agriculture, appointed by the secretary, were Mr. L. M. Estabrook, statistician and chief of the Bureau of Crop Estimates; Mr. Charles J. Brand, chief of the Office of Markets; Mr. W. J. Spillman, chief of the Office of Farm Management; Mr. L. C. Corbett, chief of the Office of Farm Horticultural Investigations; and Mr. George M. Rommel, chief of the Division of Animal Industry.

estimate of 10,077,700 as the total number of men 21 to 30 years of age, both inclusive, in the United States. The actual registration on June 5, 1917, was 9,691,344; but if to this number were added approximately 400,000, representing men within the specified ages who were already in the military and naval services and therefore not required to register, the total would be brought very close, indeed, to the estimate.

On July 30, 1918, at the request of the provost marshal general, the bureau estimated the number of men aged 18 to 20 years, inclusive, and 32 to 45 years, inclusive, in the United States on July 1, 1918. The total given by this estimate was 13,194,408. The registration on September 12 was 12,870,000, to which number should be added approximately 400,000, representing men within the ages specified who were already in the service. The total thus obtained, 13,270,000, differed from the estimate by only a little more than one-half of 1 per cent., thus again confirming the substantial accuracy of the bureau's figures.

The work of classifying the occupations of registrants was undertaken at the request of the provost marshal general, dated December 21, 1917, that a detachment of skilled workers from the Census Bureau be sent to the War Department to train the clerks who were to be assigned to the preparation of an industrial index of the registrants under the selective-service act. The preparation of this index consisted in the classification, according to occupational skill or experience shown, of cards prepared by the local registration boards from questionnaires filled by registrants. The census scheme of classification of occupations was used.

The total number of cards received to the end of June, 1918, and classified under the direction of the expert census force was 8,147,034. In the classification and verification of these cards it was necessary to handle most of them two or three times, so that the total number of handlings of cards, for all purposes, amounted to 23,707,872.

The work, which was carried on under the supervision of William C. Hunt, chief statistician for population, was, in some respects, very complex and could not have been successfully handled by inexperienced employees. The skill and

energy displayed by the Census force were greatly appreciated by the provost marshal general, who, in a letter dated June 26, 1918, to the director of the census, paid a high tribute to the value of the service rendered in the prosecution of this important piece of war work.

The bill for the next census which has passed the House and been reported in the Senate contains a provision for a biennial census of the products of manufacturing industries. This, I may explain, does not mean that a complete and comprehensive census of manufactures, such as is now taken quinquennially, is hereafter to be taken every two years. That would probably be impracticable as well as unnecessary. What we have in mind is a census of production giving the value and, so far as practicable, the quantity of products turned out in the given year by our manufacturing industries. This does not supersede the main census of manufactures which, under the law, will be taken every five years as heretofore.

The bill restores the provision for a quinquennial census of agriculture, which was contained in the Act for taking the Thirteenth (1910) Census but which Congress repealed when called upon to provide in 1915 the appropriation requisite for carrying out this provision of the law.

There is a great need also for a quinquennial census of population. This has been especially impressed upon me since I became connected with the bureau, through the difficulties and embarrassments I have experienced in obtaining satisfactory and reliable estimates of population for the computation of death rates and per capita rates. Ten years is too long an interval to be allowed to pass without an enumeration of the population, especially in a country like the United States where population growth is so unequal and variable in different communities and different periods, being affected and largely determined by the fluctuating tide of foreign immigration and also by the migration in large numbers from country to city or from one section of the United States to another. Under conditions such as these estimates based on the assumption of a uniform annual increment of growth in the population of each individual city become very uncertain and unreliable in the latter half of the decade although for the first four or five

years after a census is taken they will probably not deviate widely from the facts. I am sure that I can enlist the coöperation and support of this Association in any movement for the inauguration of a quinquennial census of population to be restricted to an enumeration recording a few fundamental facts such as sex, color or race, age, and nativity. But this is a matter for the future.

For the next two or three years it will be necessary for the bureau to concentrate all its resources and energies upon the task of taking the Fourteenth Decennial Census of the United States, covering the subjects of population, agriculture, manufactures, mines, quarries, and forest products. I think I fully realize the magnitude of this task and its peculiar difficulties, which are greater at this time perhaps than ever before owing to the high cost of labor and the more or less disorganized conditions consequent upon the war. In this great undertaking I feel the need of obtaining the benefit of the coöperation and counsel, the scientific knowledge and broad outlook, of the liberally educated economists and statisticians of the country, and more especially those of them who have been closely associated with former censuses. Through the agency of the joint committee to which reference has been made, I hope to establish a closer contact with the men of this class.

I realize also the need of having a larger number of trained statisticians and experts on the staff of the Bureau of the Census. I have a few such men, and I believe that none better could be obtained anywhere. I need more of them, but it is difficult and almost impossible to get them with the salaries I can offer under the existing law. The bill for taking the next census, however, as now reported to the Senate will improve the salary situation very materially and enable me, I trust, to secure the grade and number of assistants required for that task. It does not give me all I would like to have in the way of higher salaries but it gives about all I thought it wise to ask for, and there is no feature of the bill regarding which I have been more solicitous or more insistent than I have about this. I have urged the importance of higher salaries upon the Senate Committee individually and collectively with all the eloquence I could command. I am not sure that I can command much

or even any at all, but be that as it may, I talked to them very earnestly on the subject, and I can assure you that it is a great relief to me that in the bill as reported to the Senate the salary increase features, stricken out in the House, have been in the main restored. I trust that we shall now be able to put the bill over without sacrificing these increases.

Under this bill as it stands the salaries of the chief clerk and of the three chief statisticians who will have charge of the main divisions of the Fourteenth Census work will be \$4,000. This, in the case of the statisticians, is an increase of \$1,000, and in the case of the chief clerk of \$1,500, over the salaries which they are receiving now, and which they received during the Thirteenth Census. The geographer will receive a salary of \$3,000, which represents an increase of \$1,000.

The other two chief statisticians and the additional one provided for by the bill will receive \$3,000 each, which represents no increase. I had asked for an increase to \$3,600, but the argument was made that the work and responsibilities of these officials would not be increased in consequence of the census, as they have charge of annual inquiries which will be carried on as usual. The argument is valid as far as it goes, but the fact remains that the present salaries of these positions are inadequate.

The Census Bill, if passed in its present form, will permit me to appoint as many as twenty-five expert special agents at a salary of \$10 per diem. In connection with the Thirteenth Census, Director Durand, by means of supplementary legislation, passed after the enactment of the main act, obtained authorization to employ twenty expert special agents at a salary of \$8 a day. The present bill will, therefore, enable me to obtain a larger number of these experts—twenty-five instead of twenty—and pay them a higher salary—\$10 a day instead of \$8.

The bill further authorizes the appointment of fifteen statistical experts at a salary of \$2,000. One object of this was to provide for some of our high grade clerks, many of them women, who, through long experience and training, have acquired a skill in statistical work and a knowledge of statistical methods which is most invaluable to the bureau and who deserve greater

recognition and reward than the position and salary of a clerk affords.

I should be glad to establish in the bureau a division of statistical research, enlisting for that purpose the services of the very best statisticians that I can obtain. I have recommended in my last annual report that the bureau be made a permanent clearing house for all statistical information issued by the executive branch of the federal government. This could be done by having all the executive departments and independent government establishments submit reports, monthly or quarterly, to the Bureau of the Census describing all statistical data compiled or published during such period, thus enabling the bureau to detect any duplication or overlapping existing in the statistical work of the government and recommend its elimination. It would also make federal statistics more easily available to the public and to persons engaged in research work and would result in bringing about a material saving in expense.

In general it is my ambition and hope that when my term of service as director of the census terminates I can have the satisfaction of knowing that I have been instrumental in effecting an improvement in the organization and efficiency of the bureau, accompanied by a general advance in salaries for the supervisory officials and experts and an increase in the number of qualified statisticians in the service.

I have called your attention to some features of the work of the bureau and of the bill for taking the next census, not to boast of our achievements, which I realize come short of the ideal, but partly because I know you are interested in learning what we have done and are undertaking, and partly because I want to assure you by these evidences that I am endeavoring to increase the efficiency of the bureau and improve and develop its work in the direction of greater usefulness and a higher standard of excellence. In this endeavor I shall solicit and welcome the coöperation and support of the American Statistical Association.

THE CHAIRMAN: We will next have the pleasure of listening to Prof. Davis R. Dewey:

PROFESSOR DAVIS R. DEWEY: I have not come into very close contact in the past few years with this particular field and consequently do not feel as well informed as I ought to be in regard to the progress of the federal work. I shall simply present one point which comes from my own experience as possibly contributing some suggestion of one of the possibilities which perhaps would be of help. I teach the subject of Statistics. I have a class in that in each year in the institution with which I am connected. I use for my first textbook the Statistical Abstract of the United States by which to introduce these students to the range of statistics and accustom them in some degree to the practice. I wish to express my appreciation of that volume. Those of us who have had occasion to use that series know that it goes back for some thirty years and has been of great help to us as a book of reference.

Now, there is a great deal of activity with regard to statistical work in all the various departments and bureaus in Washington and my need is to have brought together in some volume the substance, in summary tables, of all of this work. The Statistical Abstract when it was originally planned did, I presume, cover the ground with fair completeness. These tables, properly enough, have been continued to the present time in order to secure comparability. At the present time this volume does not by any means cover the range of the statistical activity of the different bureaus; it is incomplete; you cannot find in it a great deal of the material that one would wish. I speak from memory, but you cannot find in the Statistical Abstract as I recall it, any data in regard to the mortality in the larger cities in the United States. There is a table relating to the mortality of some of the smaller towns. Nor are there assembled in that volume statistics of prices over any period of time, or statistics of wages. These are illustrations of some of the omissions. There are still included in the volume tables which are, I imagine, of very little use except to the rare specialist in some peculiar subject, and which might now be omitted in the Abstract. I think a great service could be rendered if some centralized statistical bureau in Washington, whether it be the Census Office or the Bureau

of Commerce which I believe publishes the present Statistical Abstract, or some other office, should, after some careful plan which has been prepared, extract from the different bureaus the material which has a wide and permanent value. I speak from selfish motives, so as to save us the time of searching for this material. Those of you who are more intimately at work know just where to ascertain it, but the person who is not keeping up his points of contact, has not so many supports to lean upon. To show the stress which the ordinary man can be put to, the first thing I always refer to when I want to look up a question of statistics is the World Almanac, which has the greatest variety of information of any book that I know of, and subsequently I turn to the Statistical Abstract or one of the Census Volumes. My one suggestion, therefore, is that we ought to have by some branch of the federal government a compilation which is a little more modern and more complete, of the statistical work undertaken by the other bureaus. There is a very useful volume published by the English Government, "The Statistics of Labor"—I do not recall its exact name, but it is an annual which brings together all of the principal material collected by different offices dealing with labor matters, as wages, employment, etc. We have no volume in our service which compares with that. The trade statistics which are collected in part in the Statistical Abstract ought to be improved and made more serviceable. I believe that if some such volume as this could be prepared it would receive the very sincere appreciation of all those who have to do with government statistics.

THE CHAIRMAN: I regret that neither Dr. Stone, Dean Gay, nor Professor Willcox is able to be present this afternoon. I shall therefore call next upon Mr. William A. Hathaway.

MR. W. A. HATHAWAY: When Dr. Mitchell asked me if I would come and join in this round table discussion, I asked him, even so late as last night, what was the general tenor of the meeting and what he wanted me to say, and all the help I could get was that he wanted me to be the last one and kind of sum up. Well, as it turns out, my job is a very easy one, not that there has not been a goodly supply of valuable sug-

gestions made here, but that each speaker has himself made a very fine summary of what he has said.

However, it seems to me that it is especially fitting that this Association should devote an afternoon to the discussion of Federal Statistics, and more particularly the work of our Federal Census Bureau, because the most important statistical piece of work before the country today—I care not whether we look at it from the standpoint of the business man, the scientist, student, or academician—is the Fourteenth Decennial Census of the United States. After all is said and done, we must look pretty much to the product of the Census Bureau for official facts and statistics. This is not casting any aspersions on other statistical work of the government, but is true because the work of the census has become so comprehensive that it embodies, as the director has just said, a very large proportion of our governmental statistical product. And certainly all who are engaged in statistical work, and the members of this Association in particular, must have closely at heart the work of the Census Bureau and especially this next big census. The director's presentation of the work and something as to his aims and hopes for the next census must cheer our hearts, and particularly the announcement that he has provided for a joint consultation committee of experts to be designated by this Association and the American Economic Association. In view of this, it would be inappropriate for me to go into detailed discussions or suggestions of schedules or methods. Those of us who have anything to contribute on that score will have an opportunity to do so through this joint committee. However, as a basis for further discussion from the floor, it may not be amiss to call attention to a few outstanding features:

First, I rather take exception to the remark of the first speaker (Mr. Rossiter), that he considered agriculture and manufactures more or less side lines to population statistics, which he denoted as the basic statistics. It seems to me that the statistics of manufactures and agriculture are going to be more important than ever before. We are to see probably—and I hope it may be possible to stress this idea in the scope of the inquiries and schedules—what effect our tre-

tremendously stimulated industrial life is going to leave on our manufacturing industries. The same is true of agriculture. We are going to see more clearly what effect war prices have had upon stimulating production. After all, the really big problem of our return to peace is the labor problem. And this boils down, in its last analysis, to the proper distribution of the products of industry. What shall be the share of the worker and what shall be the share of the entrepreneur? For a sound economic solution of the question we need to know pretty definitely how much product there is to distribute between the two contending classes. So the production statistics of agriculture and manufactures are tremendously important at this time.

We all realize and deplore the dearth of enlightening statistics dealing with the wage question. I hope and suggest that the census officials and the joint committee will give particular attention to wage statistics. While the statistics collected by the Bureau of Labor Statistics are helpful, they are far from giving us a satisfactory answer to many of our problems. The census has an opportunity at each census period to gather, at small cost, statistics on wages for over one-third of our gainfully employed workers, since they are engaged in the establishments which the bureau will canvas. This is an opportunity that ought not to be overlooked.

There is another suggestion that I wish to make concerning manufactures, namely, that the census emphasize the idea of physical units as a measure of production rather than value. This can be done by requiring the kind and *quantity* of products from more industries than at present.

Mr. Rossiter's suggestion that mines and quarries be omitted, should, I think, be considered very carefully. It is true we have, in the Geological Survey and Bureau of Mines, fairly complete statistics of production of nearly all kinds of mining products, and if the occupation statistics of the census can be so improved as to show better the number of people engaged in the mining occupations, perhaps the complete enumeration of mines and quarries might be omitted at this time. Each recurring census grows more difficult on account of the tremendously increased cost of enumeration and tabulation,

which is likely to be greatly aggravated at the next census by high prices. And if some of the general inquiries must be omitted, probably mines and quarries can be spared best.

For the occupational statistics I plead for very careful consideration. Certainly the country needs now as never before to know where our workers are employed and how distributed by industries and specific occupations. I do not know of any one volume that the census produces that is used more by all classes of people than the one on occupation. There is a very fertile field for improvement in classifications, and a real need to have the occupational work carried right along with the regular population tabulations rather than let it go over to a subsequent period, which delays the publication of the occupational results.

The director has mentioned more frequent enumerations. We are indeed thankful to him for his efforts to get through a biennial census of manufactures which would fill a wide gap in our statistics. Coupled with the quinquennial census, it will give us pretty accurate information about the changes in our industrial life. I hope five year censuses of agriculture may also become a reality in the future. These have been provided for by legislation, but Congress did not appropriate the money to carry it out in 1915. The enumeration could be done by rural mail carriers, correspondence, in coöperation with the agents of the Department of Agriculture, which would not make the cost prohibitive.

Although we need a quinquennial census of population very badly, I fear the cost would make it impossible to get favorable legislative action at this time. The census has done splendid work on estimating the increase of population between census periods, but I think possibly that work could be pushed a little further and thus make up for more of the deficiencies due to the lack of more frequent enumerations.

It is not my place to speak of office administrative matters, but there is just one thing I would like to mention, and that is the arrangement of the office work on the publications. I hope it will be possible for this census to have a more simplified program than the last. There was then such a deluge of general and special bulletins and reports, both preliminary and

final, for states and the country as a whole, that even many of us in the bureau were hard put to keep up with them, and if we were in that position, how must the layman have fared? It seems to me that it would be entirely feasible to publish a series of state bulletins, each dealing with population, agriculture and manufactures; follow these up with the abstract for the entire country; get these out very promptly; and let the detailed analyses come along as time and money permit.

The last speaker (Dr. Dewey) voiced a suggestion in which I heartily concur; namely, the need of a better Statistical Abstract of the United States, compiled by the Bureau of Foreign and Domestic Commerce. I would add to his suggestion, the necessity for some governmental agency to bring into one volume more world statistics on population, agriculture, manufactures, wealth and debt, foreign trade, etc. We are never again going to be an isolated nation, and the need and demand for world statistics is going to be very much greater than it has ever been before, and it seems to me that the compilation of such a statistical abstract yearly that will bring together the statistics of our own country and those of foreign countries would be invaluable to everyone in the United States. Now, who should do that work is another question. I never could see why in late years the Bureau of Foreign and Domestic Commerce got out the Statistical Abstract. I presume it is simply one of the accidents that happen in governmental work. It started there I imagine when the main tables in the volume related to our foreign trade, but foreign trade is not now more important than many other subjects included. It would seem to be the function of some centralized agency or bureau more than that of its present compilers. This emphasizes the need for a centralized statistical agency that could supervise and coördinate such work, as the director of the census has mentioned, and I hope that this Association may get behind the project and help carry it to fulfillment. I think we all agree that the cat needs a bell and I hope we are not going to fall out as to who is going to do the belling. I think if we get together in a spirit of wise coöperation and council there will be no hitch on that score. I thank you, gentlemen.

THE CHAIRMAN: We shall now be glad to hear from anyone present who would like to discuss any angle of the rather broad field of federal statistics, a subject in which we hope the American Statistical Association may, in accordance with the program that has been arranged by the director of the census, take a more active part than it has heretofore.

DR. DAVIS R. DEWEY: May I ask whether there has come under discussion before the Association any proposal whereby some of the newer or more recent work which has been done by some of the statistical officers in Washington will be taken over by other branches of the government?

THE CHAIRMAN: So far as I know the matter has not been formally laid before the Association.

DR. DAVIS R. DEWEY: If you were not in the chair I could speak more freely. We all of us know, I think, of the work which has been done, for example, in connection with prices under the more immediate direction of the Chairman, and there is other work of that sort which I hope may be permanently retained. It would be very unfortunate indeed if this is going to be lost. Certain methods have been devised which we ought to take advantage of in some statistical bureau, and while I am not prepared to make any definite proposal, I hope that some one who is better acquainted with the machinery and the possibilities that exist in Washington will make some suggestion whereby this work can be taken over by some permanent bureau and the more valuable part of it continued.

THE CHAIRMAN: Mr. Hartley, is it asking too much to suggest that we would be glad to hear from you on that subject particularly?

MR. HARTLEY: I think that subject has been covered very briefly by Director Rogers in his remarks. The work undertaken by the Census Bureau has been such collection of statistics of war commodities as seemed rather difficult to be attempted by the temporary agencies of the government. I think, however, answering the question of Dr. Dewey, that a movement is on foot by certain industrial associations to try to preserve some of the essential statistics which have been compiled at more or less frequent intervals on account of war conditions. For instance, I think the recommendation was

made by the War Service Committees, in connection with the meeting at Atlantic City of the United States Chamber of Commerce, a very short while ago, that the statistics for the leather industry be continued, say at quarterly intervals instead of the monthly collection of such statistics as has heretofore obtained. I do not know but that this recommendation is a good one. It certainly seems feasible. I believe that certain other statistics collected on account of war conditions could very well be perpetuated by some government agency—not necessarily by the Census Bureau—but certainly the important statistics that were compiled on account of war conditions could be carried on at more or less frequent intervals. I want to say on behalf of the Census Bureau that we welcome this opportunity of meeting with people from the outside. It is always helpful to get the viewpoint of what is wanted by those who are using statistics and they also get our viewpoint and understand the conditions under which we work. It has been a very great pleasure to have listened to the discussions; they have been more helpful than I even anticipated.

DR. HILL: Mr. President, I feel sure that all members of the American Statistical Association heartily endorsed the suggestion in your excellent presidential address that the Association broaden its usefulness in connection with the subject of federal statistics; and as a step in this direction we welcome the announcement of the appointment of a committee to coöperate with the Census Bureau in carrying on its work. It seems to me, however, that the Association may go even further than has been suggested and become even more influential in guiding or determining the future development of the statistical work of the United States Government. Perhaps it will not appeal to you as the proper thing for a statistical society to do; but I would like, at any rate, to raise the question of whether this Association, when some proposition looking to the development, enlargement, or improvement of federal statistics meets with its approval, might not as an organization properly engage in an active or even aggressive campaign to secure the adoption of that particular proposition, whatever it might be. Take, for illustration, the suggestion for a quinquennial census of popula-

tion. Suppose that after thoroughly discussing this matter, hearing everything that is to be said upon it pro and con, considering its cost in relation to its value, we become convinced that a population census should be taken as often as every five years. In that case, would it not be entirely proper for this society to undertake to secure the enactment of a law providing for a quinquennial census? You might ask, perhaps, what we could do to accomplish that. I think we could do a great deal if we set about it in earnest. In the first place we could formally express our approval of the proposition, and go on record as approving it; that would be something. Then we might carry on more or less propaganda in favor of the proposition, writing it up in our journal and other publications, and generally educating public opinion on the question. Perhaps we could not reach a very large public in this way, but I think the public that we did reach would include a group of very influential men. We might take steps to enlist the support and coöperation of other organizations. We probably could easily secure the support of the American Economic Association, also that of the American Sociological Society and similar organizations. We might, furthermore, enlist the coöperation of the trade organizations and chambers of commerce; and in that connection it may interest you to know that the National Chamber of Commerce, acting, so far as I am aware, upon its own initiative, formulated and introduced into Congress a few years ago a bill for a Central Statistical Commission, thus indicating an active interest in statistics on the part of that organization. Furthermore, we could make it our business to see that a bill providing for this or whatever the particular measure may be in which we are interested is properly drawn and introduced in Congress. It is not a very difficult matter to get a bill introduced; it is not always so easy to get it passed, but there is always some gain in having any measure definitely formulated in a bill. And it is possible that after such a bill was introduced that we might, individually or as an association, endeavor to interest members of Congress in the measure. As an association we could memorialize Congress and as individuals we could write to our Congressman. Any bill relating to statistics is ordi-

narly referred to the House Committee on the Census or the Senate Committee, as the case may be. Those are practically the statistical committees of Congress and we might use our powers of persuasion with the members of these committees to interest them in our pet proposition. At every Congress a new committee is organized. Would it not perhaps be possible for the American Statistical Association to canvass the members of the House and Senate, and if we found certain men there whose associations and antecedents indicate that they will appreciate the value and importance of statistics endeavor to secure their appointment on those committees?

These are merely suggestions of things that we might do, and it may perhaps seem to you that as a scientific society it would not be advisable for us to engage in any such undertakings, but I think the idea is worth considering,—worth thinking about. I believe we might safely proceed to organize our work on the assumption that within the limits of what is reasonable and practicable the American Statistical Association can get what it wants in the way of federal statistics, if it knows what it wants, and wants it bad enough to go after it. Looking to the future we might draw up a somewhat broad statistical program for the federal government. It might be a program that we could not hope to realize in less than fifty years—but no matter. I trust that this Association is going to last fifty years and more, so that we can look ahead to a long life of usefulness. We could take first the most urgent features of such a program and concentrate on them, trying to put them through first of all, and then take up the others. As I have said, this is a suggestion of possibilities which I would like to submit for your consideration.

MR. CHANEY: It occurs to me that it might be entirely possible for this Association to request the committee to be formed with reference to the coming census in conjunction with the Committee of the American Economic Association, to consider and perhaps to draft a program of general procedure; that some such general program carefully worked out and extending into every statistical organization outside the census is very desirable, no one who has been associated with any of the bureaus can fail to realize. I think I happen

to be associated with the only bureau which has the term "statistics" in its name—the Bureau of Labor Statistics.

I have listened with some interest to the remarks made in order to learn whether it is understood just what the Bureau of Labor Statistics is supposed to do, what idea this Association has with regard to the functions of that particular body. I was led to reflect upon it by the suggestion of one of the speakers that we needed a more careful collection of facts with regard to wages and prices. It happens that the Bureau of Labor Statistics is specifically directed in its organic act to collect exactly that sort of information; that is what it is for more than anything else. In a general way it is supposed to collect information with regard to the interests of the laboring classes but specifically for their benefit they are to be told how much they earn and how much they spend and various other things of that sort, so it seems to me that if the Association desires more specific information than it now obtains with regard to those subjects, it becomes germane for it to insert a prod in the person of the Commissioner of Labor Statistics—it is his duty to turn out these things for your benefit. No one would more readily admit that I think than the commissioner himself. He not being here to speak for himself, I take the liberty of saying that he should be incited to further effort along this line if this Association desires more than he now gives.

The remarks of Dr. Dewey seem to me to be applicable in a case of this sort. The Statistical Abstract, so far as I know, does not publish any of the details which the Bureau of Labor Statistics produces. I have never seen any of them there and, in order to find the tables of my own Bureau in the most accessible form, I am obliged to refer to the World Almanac. It is a good deal easier to go to the World Almanac where they have been collected together than it is to go through our own publication and find them. So I keep a volume of the World Almanac on my desk in order to be informed in regard to what my own bureau is doing. There is certainly an opportunity for valuable service somewhere in bringing together as the World Almanac does now imperfectly, the tables which are produced by the different bureaus of the government.

DR. DEVINE: It may not be relevant to this discussion, yet I hardly see how we could discuss such a broad theme as this without someone raising the question as to whether this is not the time for complete and constant records of registration of the whole population. It seems to me that, at a time when all of our male population between 19 and 45 has been made subject to a draft, when we have had such an elaborate questionnaire filled out as we have had, when 25 per cent. of our people have enrolled in patriotic service like the Red Cross, when the whole public has been used to the idea of giving information about themselves, when the larger portion of the population have had to make a statement in regard to their income, there must be a state of public opinion that would be responsive to this subject and that this would greatly lessen the psychological difficulties, if not the financial ones, that would accompany such a registration.

My interest, of course, in this whole discussion is not that of a teacher of statistics but that of one interested in social reform, public health work, relief work, and other social work of various kinds that would be enormously facilitated by such information as could be obtained by such a registration. If there is any possibility of our having any form of universal military service hereafter, there would certainly be an adequate legal and constitutional basis, if any question should be raised on that subject, for the keeping of such registration under some kind of federal supervision. If we are going to be interested in young men of eighteen years of age we must begin that interest, if it is to be at all satisfactory, at the time they are born. This consideration has been found sufficient in European countries.

The practical advantages in planning educational work and public health work, in knowing such things as the movement of population from one city to the other, from the country to the city, and so on; and the practical benefits in dealing with crime of all sorts that would come from our knowing at all times where all the people are, are so obvious and so enormous that it seems almost unnecessary to insist upon them. One of my students once made up a list of about thirty registrations in New York City that would be unnecessary if we had

one complete registration of the population, accessible to all the different federal and state activities that would have use for it. All of us realize, of course, that this registration would not take the place of a periodical census count, but it seems to me clear it would spread a most useful background for the census that we may still have to take.

MR. SWAZEY: As representing an organization that has occasion to use statistics of foreign countries as well as those of this country, I wish to second very heartily Mr. Hathaway's suggestion that the Statistical Abstract combine more of the information of foreign countries than it does at the present time. Some of that information, a small amount of it, is available in our old friend the World Almanac, but other than that we are forced to rely upon such publications as the British Statistical Abstract of Foreign Countries, which is complete, but of course now during war conditions considerably behindhand, and always somewhat behindhand and not available to a number of people who would like to use it, because it cannot be gotten readily in this country—the Statesman's Year Book. I certainly think that any information of a kind this contains, which could be compiled each year and embodied in the Statistical Abstract would be of very great advantage to the large and increasing number of users of foreign statistics.

MAJOR HUNTINGTON: I believe the definition of a round table is a place where everyone may ride a hobby. I have one hobby: printing, typographical presentation of mathematical tables. As an entirely unprejudiced outsider, not yet by a couple of hours a member of this Association, I should like to say that we do not find it very easy to refer to most government publications of tabular material. The type fails to distinguish 8 and 3, 9 and 6, etc. With a little thought on that subject and a little conference with those who have given the matter attention, I am sure great improvement with no increase of space could be effected. I have made some rather startling comparisons between different kinds of type which I should be glad to put before any member of the Association who has to do with the actual printing of tabular material.

MR. HARTLEY: A statement was made as to the collection

of statistics of mines and quarries. I do not think it was sufficiently brought out that there is no duplication in cost or effort in the decennial collection of statistics of mines and quarries by the Census Bureau. For instance, the regular decennial census of mines and quarries covers statistics of capital, wages, persons employed, materials used, and the total output of the various mines and quarries. In the decennial census year the work is carried on in coöperation with the geological survey and a supplemental schedule of products is attached to the regular census schedule, which is turned over to the Geological Survey. There is no duplication of effort, no additional cost, and the census figures cover capital, wages, persons employed and materials used, which do not form a part of the data collected by the Geological Survey.

MR. BRINTON: I should like to get a symposium on the possibilities of getting additional and more frequent data in regard to manufacturers and it seems to me that the conditions have changed very materially in this country in the last few years, that we are now out of balance in the kind of available data. We have monthly data of exports—we can find out how many automobile tires are exported each month, but it is impossible to find out how many are made here. The same is true throughout the whole field of manufacture. It seems to me that agriculture is very well represented and not only by actual figures but by estimates. We have the estimates of the wheat crop for next year. To carry the simile further, we have no estimates of how many automobiles or how many trucks will be produced next year, though that is just as well known and easier to get. I think manufacturers are pretty well accustomed to making out questionnaires, and I think it would be bad to let them get back into the old habit of not sending in any information. I do not know that there is need of knowing the amount of manufactured products turned out and the growth of the manufacture of that product. Yet no one manufacturer of firearms is able to find out the number of paper shot shells in the United States, although there are only six or seven of them, and they cannot find out the game laws so as to determine whether there is any field for paper shot shells, and things of that kind that are really

bread and butter to large industries. These people, it seems to me, deserve the same consideration comparable with the consideration that is being obtained by agriculture or the people doing export business. Manufacture, although it is a very large part of this whole country, is not at the present time properly represented, it seems to me. The facts have been worked out by the manufacturers as best they can by the formation of trade associations. I believe—though I have not got a great amount of figures—that the formation of these trade associations have been very largely due to the impossibility of getting any figures from the government on the whole industry. The trade associations have one basic weakness which the government has not got. The trade associations find it almost impossible to get all the members of the industry to come into the association. I do not think it ought to be necessary for the trade associations to get the figures for the whole industry.

MR. POTTER: I wish to discuss, briefly, points raised by Mr. Brinton and some of the others present. It seems to me that the point Mr. Brinton made that trade associations themselves are not able to collect this information is decidedly true. There is one reason that he did not give, moreover, why this is so. Many business men hesitate in peace times to give their competitors information regarding the volume of their output in dollars and cents or in articles. This reason makes it doubly desirable that the federal government extend its operations in the gathering of business statistics. Production figures should be regularly available at least for such basic raw commodities as steel, copper, coal, petroleum, cotton, leather, and wool. The logical agency to collect this information, it seems to me, is in the manufactures branch of the Census Bureau.

The Central Bureau of Planning and Statistics, which, through Dean Gay, has had contact with all the war boards where during the war most of these production figures have been developed, is planning to call together the heads of the statistical branches of these war boards with the officials of the census and other agencies particularly interested, to consider which of the manufactures statistics gathered during

the period of the war should be continued and how they should be gathered. Those connected with these statistical agencies have all been so busy getting out information for the Peace Conference that the calling of this conference has been put off for a little while, but I am sure it is going to be given very definite consideration in the near future.

I should like also to bring up a matter related to my paper this morning. I suggested that the Central Bureau of Planning and Statistics should be continued for two purposes: first, as a clearing house of statistical information; and second, in order to develop progress reports for the President as a means of administrative control. The director of the census this afternoon suggested that the Census Bureau was considering the function of a clearing house as part of the work of his bureau.

If the Central Bureau of Planning and Statistics is continued it seems to me that the function of clearing information and of standardizing statistical practice might be more effectively performed there than in a bureau that is part of one of the regular departments of the government. A bureau of any regular department of the government is handicapped in attempting to standardize the processes of other departments or bureaus. If the Central Bureau is not continued as an independent agency, however, the Census Bureau would seem to be the proper and logical place for the clearing house function, while the Efficiency Bureau would seem to be the proper and logical place for the preparation of progress reports.

MR. HATHAWAY: Mr. Potter, you say the progress reports should be continued. Under what necessity and what authority of law would you expect that to be done on a peace time basis? We have never had anything similar to that to my knowledge heretofore, except as the reports come up through the various bureaus through the department heads to the President.

MR. POTTER. I do not believe there is any authority of law at the present time, but I think there should be. The point I made this morning is that we have such a large administrative organization in Washington that the chief executive can never hope, through personal contact, to keep track of its

many activities. If we are going to have central administrative control and do away with the development of bureaucracy—independent agencies without central supervision—it must be done through effective reports to the President of the operations of departments, similar to those which have been developed as a result of necessity during the war. The Central Bureau ought to be continued as the “Information Service” for the general manager of our government, who is the President.

MR. HATHAWAY: Assuming that such a Central Bureau would not have any compiling functions itself or original investigations and all of these things that you are planning to save by distributing around through the various departments such as the Census Bureau and so on, would you not get into conflict in these special progress reports with the regular reports that are required by the executive through his departmental heads down through the bureaus?

MR. POTTER: No. These reports which have been developed during the war have, for the most part, been based on the reports made by bureau heads and department heads. The Central Bureau has simply collected these together, checked them for accuracy and reduced them in volume for presentation to the President. The Bureau has also developed such reports in branches where none existed. In the Navy Department, for instance, there was no central report from the various bureaus bringing together all the information regarding the activities of the different bureaus. Such a report was developed by the Central Bureau, however, and now the Navy Department, realizing its value, is taking it over and developing it in the department. The function of the Central Bureau in regard to these “progress reports” is to see: (1) That they are obtained from the departments with sufficient frequency, to serve as a means for administrative control; (2) that uniform methods are followed as far as possible in their preparation; (3) to see that they contain not only a report of the good things done, but also of things not so favorable; and (4) to boil them down into brief space for presentation to the President. These are the functions the Central Bureau performed during the period of the war.

I have a very strong feeling that if these reports had been developed sooner we might have avoided some of the serious difficulties the administration had to face during the war. If, for example, the chief executive had known, from month to month, the real progress in aircraft production, the probability is the program never would have gone so far astray. It was lack of information in the hands of the chief executive of the country that permitted such a condition, not only to exist, but to continue until it reached the scandal stage.

A MEMBER: I would like to ask Mr. Potter if he has thought out the number of men in Washington who would have access to the data of this Central Bureau. For instance, whether the Congressmen would have access continuously without having a committee appointed for investigation purposes.

MR. POTTER: No, I think not. I think these reports, if they are going to be effective, must be the confidential reports of the administration for administrative purposes. If they were made public all reporting on undesirable conditions would immediately cease and the reports would become what departmental reports are at the present time—simply political propaganda of the accomplishments of the administration.

MR. CLARKE: I would like to ask Mr. Potter how far the activities of the Central Bureau of Planning and Statistics had inquired, and how far he thinks if it is continued it should inquire into the work of these departments and whether it is intended that the Central Bureau should exercise the sort of function that an auditor from the outside exercises over the accounting department to see if the reports are in harmony with the facts.

MR. POTTER: The function of the Central Bureau should be exactly the function of the assistant to the general manager of a business, who reviews the reports of the various departments, goes back and gets additional information if it is required, and insures that those reports present a real picture to the general manager of the operations of each of the branches of the organization. It is the duty of the Central Bureau to see that the President gets a clear and correct report. If the bureaus develop such reports themselves, Central merely

passes them along, after combining them in a way that presents a brief and unified picture of governmental activities.

MR. CLARKE: If you saw anything suspicious you would check it up?

MR. POTTER: Absolutely. We were suspicious of some of the army requirement figures. We asked them what they meant, and partly as a result of that inquiry a revision was made. With a reasonable amount of tact in handling such matters I think it is possible to develop a system of dependable progress reports throughout the government that will give the chief executive of the government real administrative control over his machine. The combined progress report which the Central Bureau had developed before the armistice was signed, covered in twenty-six pages of graphs, tables and digested statistics, the most important activities of the war.

A MEMBER: It seems to me that that is an excellent argument for having this work carried on by an organization that is not under the operation of any department. It really is an independent function.

THE CHAIRMAN: That is probably why Mr. Potter suggests that if the Central Bureau be not continued this work might go to the Bureau of Efficiency, which has no departmental affiliation.

MR. ROSSITER: I am in hearty accord with what Mr. Potter has been saying. Mr. Potter and I have been actively at work on this sort of thing for several months and probably we have an especially keen appreciation of the value of the work. I arose to say that I doubt very much if legislation is necessary for what Mr. Potter has been describing. It is doubtful, indeed, whether legislation could be obtained for it. If the President of the United States is sufficiently impressed with the value of this sort of thing there would not be the slightest difficulty in obtaining it. I am inclined also to believe that a step has really been made in that direction by the Central Bureau. Mr. Potter has pointed out the fact that some of our reports have attracted the favorable attention not only of the executive office but of the departments themselves. If officials believe that a general manager's report is a good thing, they merely need to take the necessary steps to

see that it is continued. It is not a question of whether information exists. Of course it exists in some form. The other day at the Navy Department that very question came up. The data are always in the department, but such information lodges in little nooks and crannies from which it is frequently extracted only for the annual report. As to the personnel of the navy, from time to time you could obtain always the number of men floating, the number in the reserves, and the number in the barracks. The secretary of the navy, for example, can obtain data relating to personnel if he asks for it, but if he does ask for it he gets it from the different bureaus, operations, navigation and marine corps that have the material in various forms. It is perfectly evident that, if such material is obtained periodically and put in the form of good tabular statements so that it is comparable from month to month, the secretary would begin to get an impressive picture of the personnel of the navy. The Navy Department already is taking up the problem of obtaining monthly a general manager's report. If the other departments would simply do that, and then permit the Central Bureau to have the material, it could very easily be turned into such shape that it would become a periodic presentation to the President of basic data in form comparable with what has been prepared before. Legislation is not necessary. The sentiment of the different departments ought to work toward that end, and an excellent beginning has been made by the Central Bureau of Planning and Statistics, but if, as suggested, that bureau goes out of existence possibly the census might take up that part of the work. This seems to me to be possibly one of the things accomplished as a result of war activities; if the Central Bureau has made a start in the direction of a general manager's report it may ultimately become of the greatest importance.

MAJOR HUNTINGTON: Something has been said of the work of the navy. I think it might be proper to mention in this connection that the army has been for many months preparing a weekly report very much of this sort for the benefit of Secretary Baker and that this report has been very much appreciated by Secretary Baker. It goes to him every Sat-

urday night and he never leaves the building until he gets it actually in his hands and takes it home to read over Sunday. It is an executive's report, of about sixty pages, very much along the lines that have been described by Mr. Potter. And another thing that might be proper to mention; Mr. Potter spoke, I think, of the value of the work of the Central Bureau in stimulating the production of reports where the value of the things in those reports had not been altogether appreciated. That is exactly what has taken place in the War Department also. A number of indispensable reports have been prepared by the various staff corps and departments, solely at the instigation of the Statistics Branch, General Staff.

I have with me samples of the no longer very secret communications from the War Department to Secretary Baker; semi-monthly reports of personnel, weekly reports of things in general and reproductions of war charts, the form and get-up of which I think might be interesting to some of you.

THE CHAIRMAN: If no one else desires to take part in the discussion, we will stand adjourned to reassemble at 8 o'clock for our annual business meeting, which will be the last session of this convention.

ADJOURNED at 5 p. m.